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eggs conveyed by said conveying means passes between said light source and said light detector;

- (ii) providing switching means for switching said light source at a frequency greater than 100 cycles per second; and
- (iii) detecting light that passes through said egg from said light source with said light detector.

(c) transmitting said classification signal to control means for controlling injection of each of said eggs;

(d) generating a selective injection signal from said control means based on said classification signal;

(e) transmitting said selective injection signal to injection means for injecting a substance into avian eggs, so that only those eggs indicated by said classification signal as suitable for injection are injected with said substance.

REMARKS

1. Double Patenting ("same invention")

Claims 1-27 stand rejected under 35 USC §101 as drawn to the identical subject matter of issued US Patent No. 5,745,228 to Hebrank. To expedite the prosecution of the present application, claims 1-27 have been cancelled.

2. Double Patenting ("obviousness type")

Claims 31-43 and 47-50 stand rejected under the doctrine of obviousness-type double patenting over Hebrank et al. (US Patent No. 5,745,228) in view of Coady et al. (US Patent No. 3,616,262).

The Hebrank et al. '228 application is assigned to Embrex, as is the present application. A terminal disclaimer is submitted herewith to overcome the present rejection.

Claims 31 and 47 have been amended to independent form.

In view of the above, withdrawal of the present rejection is respectfully requested.

3. Obviousness Rejection of Claims 28-30, 44-46 and 51

Claims 28-30, 44-46 and 51 stand rejected as obvious over Coady et al. (US Patent No. 3,616,262). Applicants respectfully traverse this rejection.

Coady is cited as teaching an apparatus comprising conveying means for conveying a plurality of eggs through a candling station, where an observer visually assesses each egg and marks those eggs considered to not possess a live embryo. The Office Action acknowledges that Coady does not teach classifying the egg in an automated system, but states that it would have been obvious to classify an egg non-manually, citing *In re Venner* (120 USPQ 192) for the proposition that broadly providing an automatic means to replace manual activity to accomplish the same result involves only routine skill.

Applicants respectfully submit that the presently claimed invention is not merely replacing the manual activity described in Coady with automatic means. Coady teaches marking of eggs that are non-viable, and removal and replacement of those eggs prior to further treatment of the eggs. See column 2, lines 54-57 ("it is the purpose of this invention of course to separate infertile eggs and those containing non-viable embryos from the eggs containing live embryos" (underlining added). See also column 2, line 69 to column 3, line 4 regarding removal and replacement of marked eggs. The Coady method results in a tray of eggs that is "known to contain eggs all of which have live embryos." Col. 3, line 3-4.

In contrast, the present claims do not recite a removal and replacement step (manual or otherwise). The classification of the eggs results in automatic selective injection -- only those eggs classified as suitable for injection are injected. If eggs are missing from the tray, injection will not occur at that site. Thus a tray of eggs may contain eggs both suitable for injection and unsuitable for injection, and have 'empty' sites as well, but injection occurs only at those sites deemed suitable for injection. There is no teaching or suggestion in Coady to integrate the classifying step with the injection step to achieve selective injection of a flat of eggs.

In most commercial egg hatcheries, eggs are placed in incubation trays (or flats) during incubation. The incubation trays hold a plurality of eggs and each egg is in an upright position. However, when the eggs are ready to hatch, they must be place on their side on a

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flat surface (so that the hatched chick can walk). Thus in commercial hatcheries, incubated eggs are transferred from incubation trays to hatching trays late in the incubation period; typically, any *in ovo* injection occurs at the time of transfer. During injection, eggs in incubation flats are passed through the injection apparatus, and then transferred to hatching trays after being injected. Automated injection machines for avian eggs typically are designed to inject a plurality of eggs held in an egg flat, using a bank of injection needles. See, e.g., US Patent No. 4,681,063 to Hebrank; US Patent No. 4,593,646 to Miller et al. (copies of record). Due to the percentage of dead or infertile eggs that occurs in hatcheries, during automated injection some injectant will be wasted when it is introduced into dead eggs. To conserve injectant, the eggs could be candled and dead eggs replaced with live eggs (as taught by Coady). However, this would not be suitable in commercial hatcheries due to the time and labor that would be required. The present invention solves these problems, by combining automatic assessment of eggs with selective injection of the assessed eggs.

In view of the above, Applicants submit that the present application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,



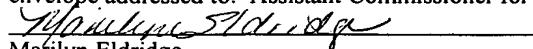
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Enclosed: Terminal Disclaimer

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, DC 20231, on 19 November 1998.


Marilyn Eldridge
Date of Signature: 19 November 1998